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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,699	02/23/2004	Jimbay P. Loh	1410/77058	1317

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EXAMINER	
WEINSTEIN, STEVEN L	

ART UNIT	PAPER NUMBER
1794	

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04/27/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/784,699	LOH ET AL.	
	Examiner	Art Unit	
	Steven L. Weinstein	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2008 and 16 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7,9,11-13,16-18,21-32,41 and 44-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7,9,11-13,16-18,21-32,41, and 44-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7,9,11-13,16-18,21-32,41, and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over McIntyre et al (4,789,553) as further evidenced by Dameno et al (EP1338209), Holmes et al (EP 275717), Howard et al (EP 415,787), Tan (WO 98/52422), Hunter (4,539,212), Tonner et al (4,262,027), Brooks et al (3,886,296), Doster et al (4,597,976), Raffensberger (4,734,291), Barnes et al (5,599,573), and Oh (5,695,801), further in view of Kenji et al (JP 8-131065), Hoshizaki Electric Co. (JP 6-113718), Tanaka et al (JP9-187221), Hoshizaki Electric Co. (JP 10-262580), Hoshizaki et al (JP 11-137162), Hoshizaki Electric Co. (JP10-327833), Hoshizaki Electric Co. (JP10-262583), Nippon Sanso KK (JP 2000-60512), Hoshizaki Electric Co. (JP 2000-139374), Sanki Sangyo KK (JP 2000-312576), Numata (JP 7-274921), Cumakov et al (EP 642824), Nisshin Flour Milling Co. (JP 6-113769), Okazaki (JP 4-108353), and Suzuki Ryuji (JP 1-196273), essentially for the reasons given in the Office actions mailed 10/26/07 and 6/9/08.

Claims 7,9,11-13,16-18,21-32,41, and 44-46 are also rejected under 35 USC103(a) in reverse order, that is, as being unpatentable over Kenji et al (JP 8-131065), as further evidenced by Hoshizaki Electric Co. (JP 6-113718), Tanaka et al (JP9-187221), Hoshizaki Electric Co. (JP 10-262580), Hoshizaki et al (JP 11-137162), Hoshizaki Electric Co. (JP10-327833), Hoshizaki Electric Co. (JP10-262583), Nippon

Sanso KK (JP 2000-60512), Hoshizaki Electric Co. (JP 2000-139374), Sanki Sangyo KK (JP 2000-312576), Numata (JP 7-274921), Cumakov et al (EP 642824), Nisshin Flour Milling Co. (JP 6-113769), Okazaki (JP 4-108353), and Suzuki Ryuji (JP 1-196273), all further in view of McIntyre et al (4,789,553) as further evidenced by Dameno et al (EP1338209), Holmes et al (EP 275717), Howard et al (EP 415,787), Tan (WO 98/52422), Hunter (4,539,212), Tonner et al (4,262,027), Brooks et al (3,886,296), Doster et al (4,597,976), Raffensberger (4,734,291), Barnes et al (5,599,573), and Oh (5,695,801), essentially for the reasons given in the Office actions mailed 10/26/07 and 6/9/08.

The previous rejections are repeated below for applicants' convenience.

McIntyre et al discloses a method for acidifying a food product comprising contacting the food product with an edible acidic solution effective for lowering the pH of the final product to less than or equal to 4.6. McIntyre et al discloses that by reducing the pH of the food product to the recited pH, the food product can then be given a heat preservation step under much milder conditions than if the pH had not been reduced. This is because lowering the pH of the food product into the acidic range has an antibacterial effect, which also makes bacteria more susceptible to lower temperatures. This is applicants' reason for lowering the pH as well. Dameno et al (EP1338209), Holmes et al (EP 275717), Howard et al (EP 415,787), Tan (WO 98/52422), Hunter (4,539,212), Tonner et al (4,262,027), Brooks et al (3,886,296), Doster et al (4,597,976), Raffensberger (4,734,291), Barnes et al (5,599,573), and Oh (5,695,801) are all relied on as further evidence that it was notoriously conventional to introduce an agent that

lowers the pH of a food product, for preservation purposes. Claim 7 differs from McIntyre et al, as further evidenced by the secondary art in that the pH reducing agent is an electrodialyzed composition. As disclosed, the specification appears to be vague as to what this composition actually is, but reading between the lines, it would appear that the composition is what is termed in the art "acidified water" (which is made by an electrolysis process using membranes). Thus, the acidified water when associated with the food product, lowers the pH of the food product. As evidenced by Kenji et al (JP 8-131065), Hoshizaki Electric Co. (JP 6-113718), Tanaka et al (JP9-187221), Hoshizaki Electric Co. (JP 10-262580), Hoshizaki et al (JP 11-137162), Hoshizaki Electric Co. (JP10-327833), Hoshizaki Electric Co. (JP10-262583), Nippon Sanso KK (JP 2000-60512), Hoshizaki Electric Co. (JP 2000-139374), Sanki Sangyo KK (JP 2000-312576), Numata (JP 7-274921), Cumakov et al (EP 642824), Nisshin Flour Milling Co. (JP 6-113769), Okazaki (JP 4-108353), and Suzuki Ryuji (JP 1-196273), just as it was notoriously conventional to lower the pH of food products with an acid as an acidifying agent, it was also notoriously conventional to expose food products to acidified water, of the type recited by applicants, to lower the pH of food products for a number of reasons, including preservation. To modify McIntyre et al as further evidenced by the secondary art and substitute one conventional pH reducing agent for another conventional pH reducing agent would, for its art recognized and applicants' intended function would therefore have been obvious. There is no unexpected result. The acidified water is known to lower pH, and once the pH is lowered, benefits result in terms of the reduction in heat preservation conditions as well as other benefits. Note, too, that the art taken as

a whole (e.g. Cumakov et al) discloses that both acidified water as well as alkaline water, both produced through electrodialysis, can have positive preservation effects. Also, although Suzuki Ryuji specifically discloses alkaline water in a preservation method, Suzuki Ryuji nevertheless recognizes that by using treated water as a pH changing agent, pH changing agents such as alkaline chemical additives can be avoided, thus preventing undesirable side effects, which is applicants' goal as well. In regard to the specifically recited ion concentrations and chlorine concentration, once it was known in the art to acidify water so that it can be used in a food pH reducing process, the particular ion concentrations of the composition is seen to either have been inherent or an obvious result effective variable. In regard to the dependent claims and the other independent claims, these claims recite both food compositions, which are conventionally acidified for preservation purposes, and food processing steps that are conventionally employed in food preservation. As evidenced by McIntyre et al (4,789,553), and further evidenced by Dameno et al (EP1338209), Holmes et al (EP 275717), Howard et al (EP 415,787), Tan (WO 98/52422), Hunter (4,539,212), Tonner et al (4,262,027), Brooks et al (3,886,296), Doster et al (4,597,976), Raffensberger (4,734,291), Barnes et al (5,599,573), and Oh (5,695,801), it was well established to reduce the pH of food products such as vegetables, meats, pastas (either in dry or dough form) etc., especially for the reason that milder heat preservation conditions can then be employed. The art taken as a whole also discloses that it was, of course, conventional to employ a heat preservation step, either after packaging or before packaging, such steps including as part of an aseptic, hot fill process, and it was also

conventional to associate the acidifying agent with the food product either before packaging or after packaging the food product in a package. The particular process variables are also taught by the art taken as a whole.

In regard to the second ground of rejection, since Kenji et al (JP 8-131065) as further evidenced by the secondary art, teaches it was well established to employ acidified water in a food processing method, including food preservation, wherein it is desired to reduce the pH, to modify the combination and employ an otherwise conventional food preservation process which can include such conventional steps as reducing the pH of the food, reducing the ph before or after packaging, hot filling or post packaging heating, etc., would have been obvious in view of McIntyre et al (4,789,553), as further evidenced by Dameno et al (EP1338209), Holmes et al (EP 275717), Howard et al (EP 415,787), Tan (WO 98/52422), Hunter (4,539,212), Tonner et al (4,262,027), Brooks et al (3,886,296), Doster et al (4,597,976), Raffensberger (4,734,291), Barnes et al (5,599,573), and Oh (5,695,801).

It is noted that claims 7,13,18, and 41, now include limitations which have been treated previously. For example, in regard to the specifically recited ion concentrations and chlorine concentration, it was noted that once it was known in the art to acidify water so that it can be used in a food pH reducing process, the particular ion concentrations of the composition is seen to either have been inherent or an obvious result effective variable, routinely determinable. In regard to the particular recited conventional food compositions that are treated, these products are conventionally acidified for preservation purposes as evidenced by the art taken as a whole. Finally,

claim 7 recites that the ED composition is in an amount sufficient to achieve a pH of 4.6 or less in the final food product and claim 13 recites in the final preserved food product. What time factor is represented by the word "final" is not clear. That is, after the food product has all the additives combined or after the food product has undergone some type of preserving heat treatment, etc. There is no recitation that indicates any time period beyond the two just mentioned. In any case, the art taken as a whole discloses adding pH reducing substances to foods so that at the time of preservative-type heating steps, the pH of the food is less 4.6 or less, so that the food is able to undergo milder preservative-type heating to achieve long term preservation by eliminating bacteria without subjecting the food to temperatures that have a negative affect on the properties of the food. The art taken as a whole also discloses that the reduced pH can be employed even without the preservative-type heating step to preserve foods by providing an antibacterial environment. Therefore, the art taken as a whole reads on the phrases "the final food product" and "the final preserved food product".

All of applicants urgings filed 10/9/08 and 1/16/09 have been fully and carefully considered but are not found to be convincing, essentially for the reasons of record, fully and clearly detailed in both of the previous Office actions. An urging has been previously made that it would not have been obvious that acidified water could reduce the pH of a food product to 4.5 or less. This urging was not found to be convincing. As noted previously, the art taken as a whole discloses that lowering the pH of food products to the recited pH is notoriously conventional. The art taken as a whole is seen to be a generic teaching that any (obviously non-toxic) compound capable of reducing

the pH of food products, known generally as acidulants, would be useful to accomplish its well known function. Acidulants work by having sufficiently lower pH than the food products, and being present in a sufficient amount, to thus being effective in lowering the pH of the contacted food products to equilibrate to the desired pH. Numata Shoji et al ('921) discloses producing strongly acidic water having a pH of 1.5-3.3 and immersing food products in the water to improve the stability of long term storage of the food products through the microbiocidal treatment of the food by immersing it in the strongly acidic water. This is clear evidence that the pH of the food is reduced by the acidified water because the bacteria would not otherwise be affected. Nishhin Flour Milling ('769) discloses providing acidic water at a pH of 2-5, preferably 3-4, and adding the water to noodle compositions. Hoshizaki Electric ('718) treats fish with acidic water to obtain a high degree of disinfection, which also indicates the pH of the fish is reduced.. Hoshizaki Electric ('833) employs acidic water in a process of sterilizing food. Ono Kenji et al ('065) treats food with acidic water at a pH less than or equal to 4 and then heat treats the food at mild temperatures to deactivate enzymes. Thus, applicants are not the first to produce an ED composition (e.g., acidic water) that has low pH, and they are not the first to apply ED compositions/acidic water to foods, and they are not the first to apply ED compositions/acidic water to foods for preservation purposes, and one of ordinary skill in the art would be fairly led to employ ED compositions/acidic water as an acidulant in the conventional acidification/heat preserving process in view of the art taken as a whole. There would be every reason to expect that acidic water having a low pH, would be able to reduce the pH of the foods to less than 4.5. Applicants now urge

that one of ordinary skill in the art would have no reasonable expectation that an ED composition as claimed would have sufficient buffering capacity to maintain a pH below 4.6 in a final food product. This new urging is equally unconvincing. It is first noted that the phrase “final food product” and “maintain” ...in a final product” is ambiguous at best as to what point in time is the product a “final product". Secondly, applicants’ urging is mere opinion, not supported by any convincing factual evidence. In fact, the art taken as a whole, in their discussion of the antibacterial or preservative effects derived from treating food products with an ED composition, evidences that the results of such treatment is no different than the results employed in other conventional acidifying compositions, thus fairly suggesting that the pH is achieved (and “maintained”) in the “final” product.

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven L. Weinstein whose telephone number is 571-272-1410. The examiner can normally be reached on Monday-Friday 7:00 A.M.-3:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steve Weinstein/
Primary Examiner, Art Unit 1794